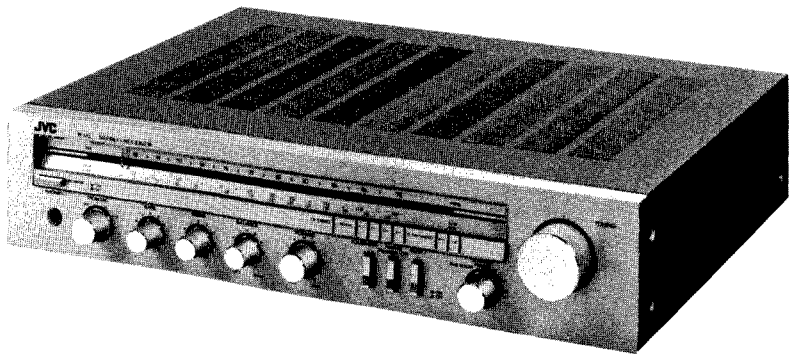
JVC

SERVICE MANUAL

MODEL R-1XL

STEREO RECEIVER



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Warning:
When replacing the parts marked with ⚠ , be sure to use the designated parts to ensure safety.

1. Specifications

FM Tuner Section (Figures are based upon IHF standard)

Tuning Range	: 87.5 MHz – 108 MHz
Usable Sensitivity (IHF)	: 10.3 dBf (1.8 μV/300 Ω)
50 dB Quieting Sensitivity	
Mono	: 14.8 dBf (3.0 μV/300 Ω)
Stereo	: 38.3 dBf (45 μV/300 Ω)
Distortion	
Mono	: 0.15 % (1 kHz)
Stereo	: 0.4 % (1 kHz)
Signal to Noise Ratio (Weighted "A" Network)	
Mono	: 82 dB (74 dB, DIN)
Stereo	: 75 dB (65 dB, DIN)
Selectivity	: 65 dB, ±400 kHz (55 dB, ±300 kHz, DIN)
Capture Ratio	: 1.0 dB
IF Rejection	: 90 dB at 98 MHz
Image Rejection	: 60 dB at 98 MHz
Stereo Separation	: 40 dB at 1 kHz

MW Tuner Section

Tuning Range	: 525 kHz – 1605 kHz
Usable Sensitivity	: 300 μV/m, 55 μV (External Antenna)
Signal to Noise Ratio	: 50 dB
Distortion	: 0.5 % at 100 mV/m
Selectivity	: 36 dB, ±9 kHz

LW Tuner Section

Tuning Section	: 150 kHz – 350 kHz
Usable Sensitivity	: 500 μV/m, 300 μV (External Antenna)
Signal to Noise Ratio	: 50 dB
Distortion	: 0.5 % at 10 mV/m
Selectivity	: 36 dB, ±9 kHz

Amplifier Section

RMS Power		
Both channels driven, from 20 Hz to 20 kHz	: 25 W per channel at 8 ohms	
RMS Power		
Both channels driven, at 1 kHz	: 27 W per channel at 8 ohms	
Total Harmonic Distortion:	0.03 % at rated power 20 Hz – 20 kHz 8 ohms 0.008 % at rated power 1 kHz 8 ohms	
Input Sensitivity/Impedance		
PHONO	: 2.5 mV/47 kohms	
TAPE PLAY 1, 2	: 120 mV/40 kohms	
TAPE PLAY 1 (DIN)	: 120 mV/40 kohms	
Tone Control		
Bass	: ±8 dB at 100 Hz	
Treble	: ±8 dB at 10 kHz	
Hum and Noise (to rated input level)	(Weighted by IHF "A" network)	New IHF
PHONO	: 71 dB	74 dB
AUX, TAPE PLAY	: 91 dB	78 dB

Power Consumption

	Line Voltage & Frequency	Power Consumption
Continental Europe	AC 220 V∿, 50 Hz	310 W
U.K. & Australia	AC 240 V∿, 50 Hz	310 W

Dimensions			Weight
Height	Width	Depth	Net
9.4 cm	42.0 cm	35.0 cm	6.1 kg

2. Removal Procedures

2-(1) Top Cover

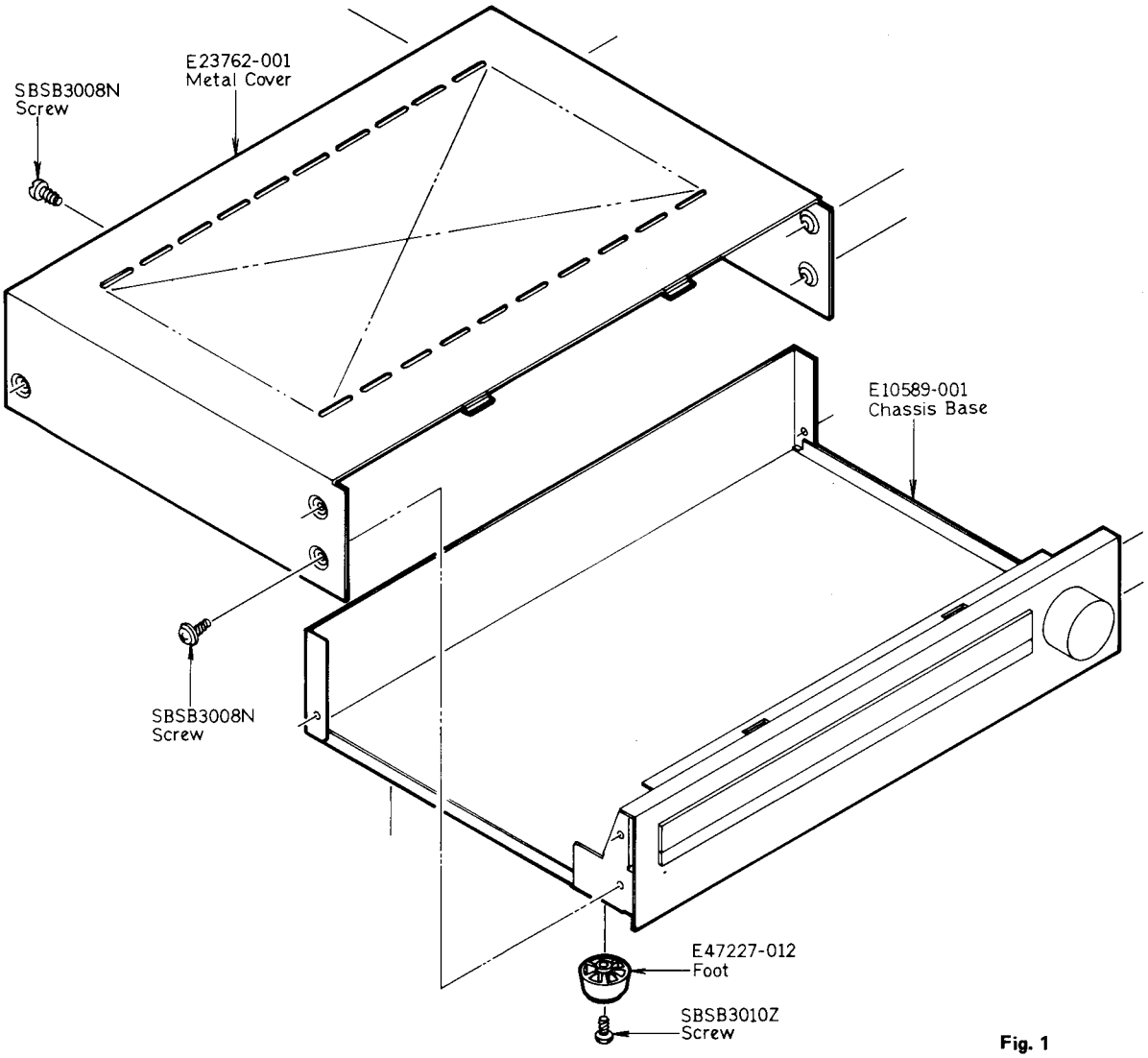


Fig. 1

2-(2) Bottom Plate and Power Transistors

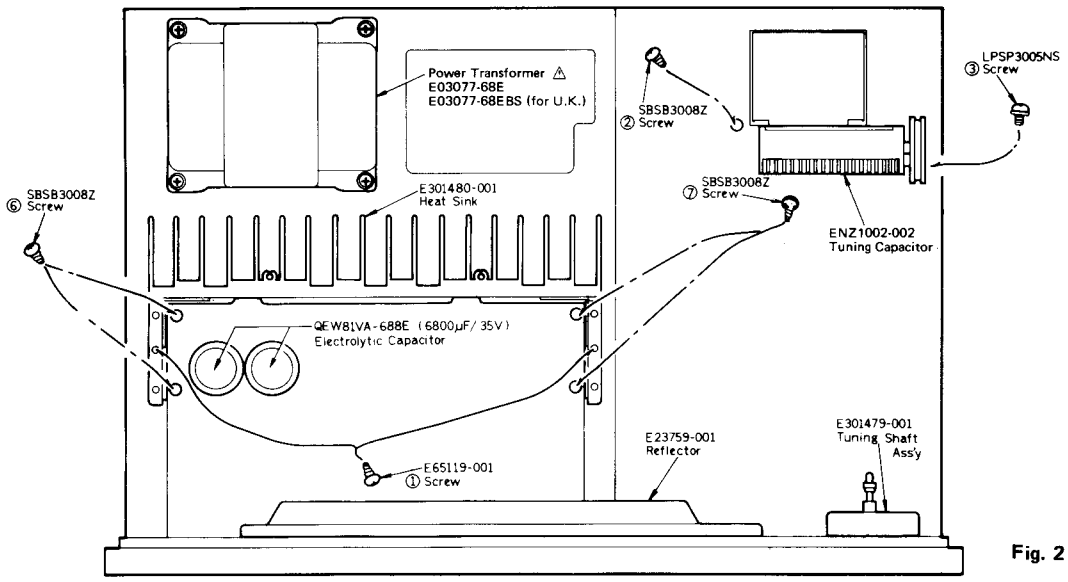


Fig. 2

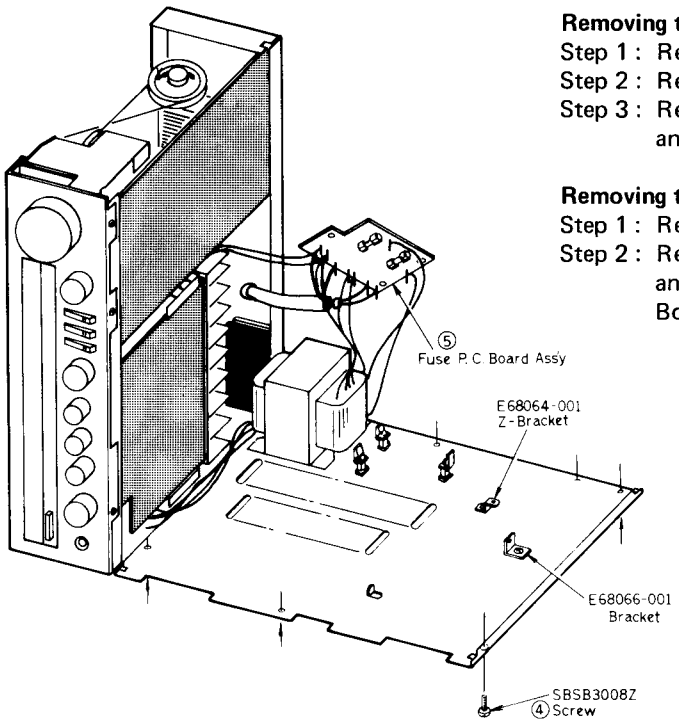


Fig. 3

Removing the Bottom Plate

Step 1 : Remove 4 screws ① , ② , ③ .(Fig. 2)
Step 2 : Remove 7 screws ④ . (Fig. 3)
Step 3 : Remove the Fuse P.C. Board Ass'y ⑤ and the replace the Bottom Plate.

Removing the Power Transistors

Step 1 : Resolder the power transistor's leads.
Step 2 : Remove 4 screws ⑥ , ⑦ (Fig. 2) and heat sink from Audio unit P.C. Board Ass'y and then replace the transistors.

3. Rear View and Part Numbers

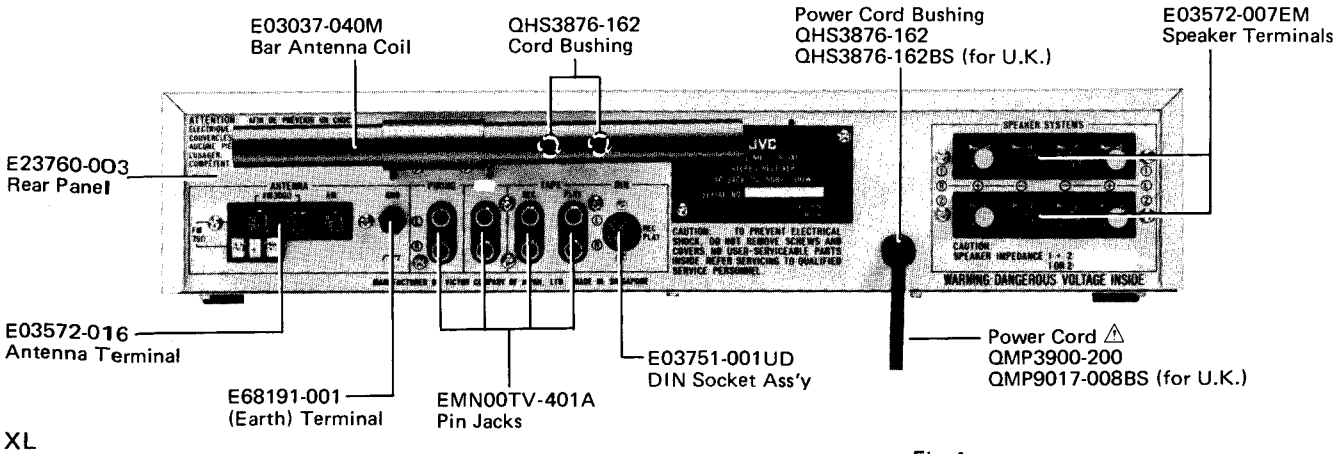
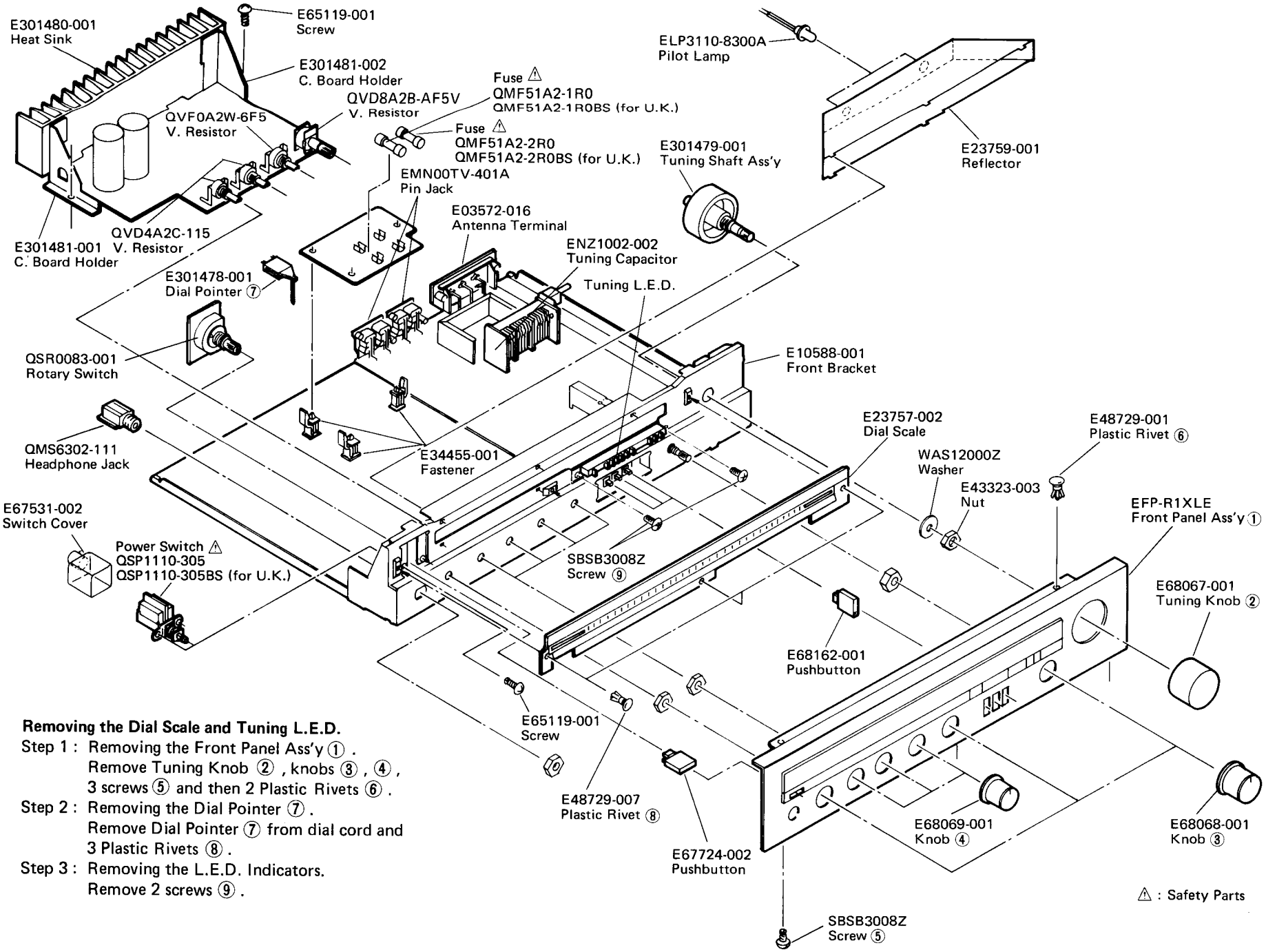


Fig. 4

4. Exploded View and Part Numbers



Removing the Dial Scale and Tuning L.E.D.

Step 1 : Removing the Front Panel Ass'y ① .
Remove Tuning Knob ② , knobs ③ , ④ ,
3 screws ⑤ and then 2 Plastic Rivets ⑥ .

Step 2 : Removing the Dial Pointer ⑦ .
Remove Dial Pointer ⑦ from dial cord and
3 Plastic Rivets ⑧ .

Step 3 : Removing the L.E.D. Indicators.
Remove 2 screws ⑨ .

⚠ : Safety Parts

Fig. 5

5. Dial Stringing Procedures

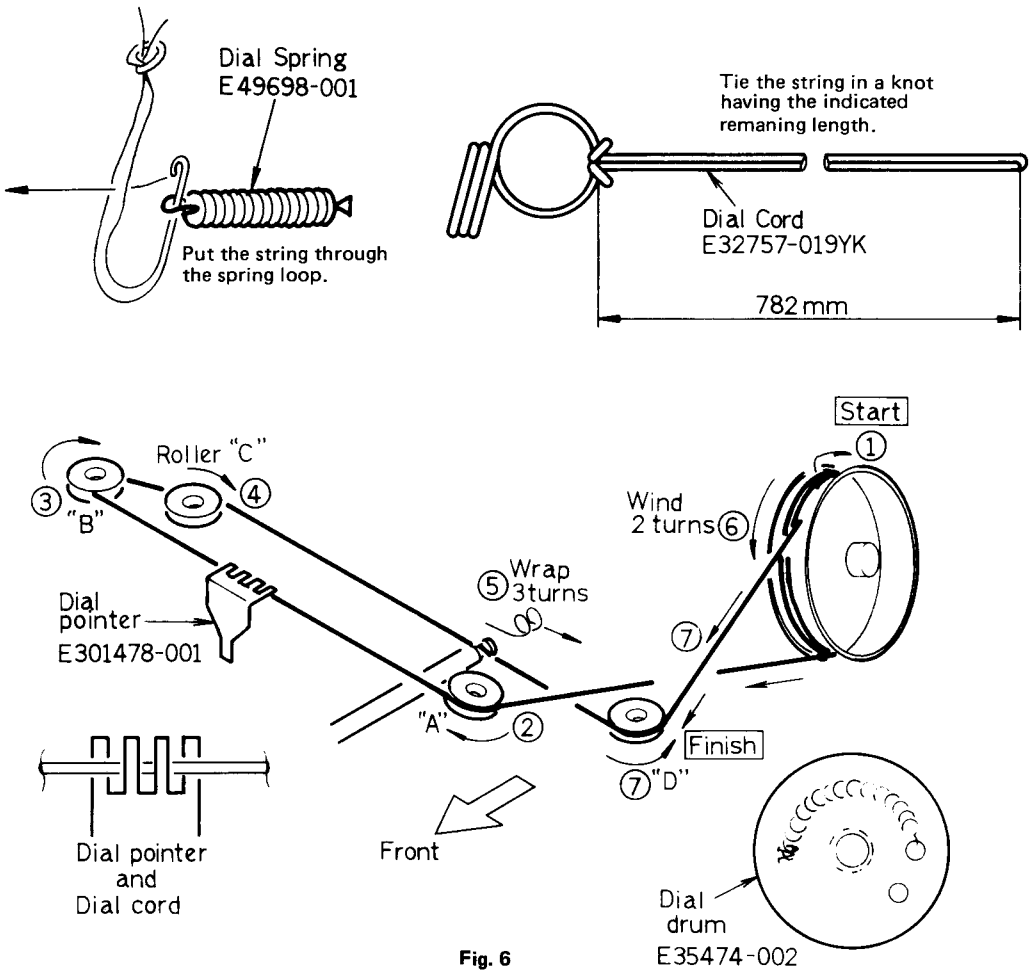


Fig. 6

(1) Remove dial pointer and old cord.
(2) Tie end of new dial cord to one end of dial spring, connect other end of dial spring of bottom right eye inside dial drum.
(3) Rotate the tuning capacitor dial drum to its maximum counterclockwise position.
(4) Run the dial cord through the slot in the rim of the dial drum. See step ①.
(5) Guide the dial cord around, over and under rollers "A", "B" and "C". Keep the dial cord taut during this procedure. See steps ② to ④.
(6) Pull the dial cord taut and wrap 3 turns counterclockwise around tuning shaft. See step ⑤.
(7) Guide the dial cord over the dial drum and wind 2 turns clockwise. See step ⑥.
(8) Pull the dial cord taut and set it around roller "D". See step ⑦.
(9) Turn the tuning shaft to rotate the dial drum fully counterclockwise and fully clockwise to distribute the tension along the dial cord.
(10) Place the dial cord over and under the tabs on the rear of the dial pointer and place the dial pointer on the top of the dial rail.
(11) Turn the tuning shaft clockwise. Slide the dial pointer to zero (0) calibration marker on the logging scale while holding tuning shaft fully clockwise. Cement the dial pointer to the dial cord to prevent slippage. Allow cement to dry thoroughly.

6. FM/MW(LW) Tuner Alignment Procedures

6-(1) FM Section

Alignment Location on TFC-32 FM/MW (LW) Tuner P.C. Board Ass'y

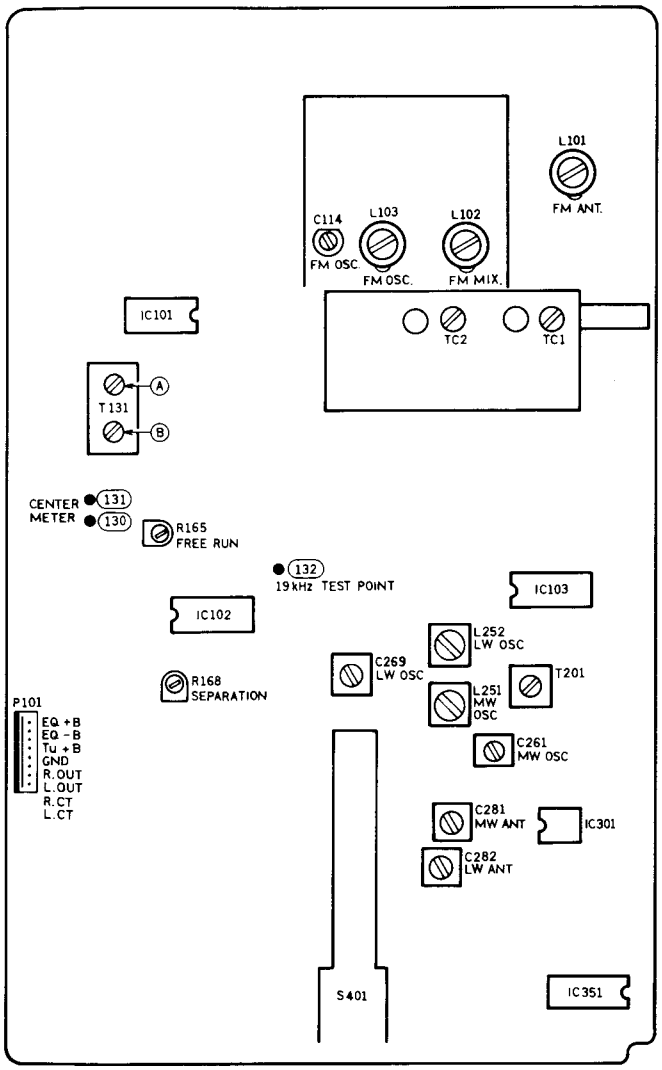


Fig. 7

6-(1) FM Section

Descriminator, Center Meter, Distortion and Signal Gain

1. Set to FM.
2. Connect an RF generator, 1 kHz modulation and 75 kHz deviation, to the antenna terminals on the rear panel through a dummy antenna.
3. Connect an Oscilloscope, Distortion Meter and VTVM to the Rec. Out jacks on the rear panel.
4. Tune to a frequency where there is no broadcasting.
5. Adjust the core of T131 indicated by arrow Ⓐ so that the FM Tuning L.E.D. illuminates the center position.
6. Set the RF generator to 98 MHz.
7. Set the dial pointer to 98 MHz.
8. Adjust the core of T131 indicated by arrow Ⓑ so that the distortion is minimized at a value less than 0.4 %.

Tracking and Sensitivity

Precaution: No adjustment is necessary. The tracking and sensitivity have been adjusted properly and completely at the factory. If any special reason occasioned, take the following procedures carefully.

Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel through a dummy antenna.
2. Set the RF generator to 88 MHz, a modulation of 1 kHz and a deviation of 75 kHz to provide an input of 2 μV.
3. Connect a VTVM and an Oscilloscope to the Rec. Out jacks on the rear panel.
4. Set the dial pointer to 88 MHz.
5. Adjust the three coils L103, L102 and L101 in the tuning gang to maximize the output.

High Frequency

6. Set the RF generator to 108 MHz, a modulation of 1 kHz and a deviation of 75 kHz, to provide an input of 2 μV.
7. Set the dial pointer to 108 MHz.
8. Adjust the FM trimmers C114, TC2 and TC1 in the tuning gang to maximize the output.
9. Repeat these high and low frequency adjustments alternately until maximum sensitivity is obtained.

Multiplex and Stereo Separation

Multiplex

1. Set the Stereo signal generator as follows: 400 Hz modulation frequency, 7.5 kHz deviation pilot, 67.5 kHz main and sub carriers. Connect its output to an RF generator.
2. Connect an RF generator to the antenna terminals through a dummy antenna.
3. Connect a VTVM, an Oscilloscope and a Distortion Meter to the Rec. Out jacks on the rear panel.
4. Set the RF generator to 98 MHz and output of 1 mV.
5. Set the dial pointer to 98 MHz.
6. Connect the Frequency Counter to 19 kHz Test Point (TP132).
7. Switch off the pilot signal of Stereo Modulator.
8. Adjust R165 so that the frequency counter indicates 19 kHz (0 ~ -50 Hz).

Stereo Separation

9. Switch the selector of Stereo Modulator to left channel modulation.
10. Adjust R168 so that the output of right channel is minimized.
11. Switch the selector of the modulator to right channel modulation.
12. Adjust R168 so that the left channel is minimized.
13. Set R168 to the average if the separation of left and right is different.

6-(2) MW(LW) Section

Note: ( ) shows LW Alignment Procedures
Tracking and Sensitivity
Low Frequency

1. Connect the RF generator to the antenna terminals on the rear panel, set this to 600 kHz (160 kHz) with 30 % modulation at 400 Hz.
2. Connect an AC VTVM and an oscilloscope to the Rec. out jacks on the rear panel.
3. Set the dial pointer to 600 kHz (160 kHz).
4. Adjust OSC coil L251 (L252) and the ferrite bar antenna core to maximize the output signal. Left ferrite bar is for MW (right ferrite bar is for LW).

High Frequency

5. Set the RF generator to 1400 kHz (350 kHz) with 30 % modulation at 400 Hz.
6. Set the dial pointer to 1400 kHz (350 kHz).
7. Adjust the trimmers C261 (C269) and C281 (C282) in the tuning gang so that the output signal is maximized.
8. Repeat these high and low frequency adjustment procedures alternately until maximum sensitivity is obtained.

7. Power Amplifier Idling Current Adjustment Procedures

Adjustment Location on TXX-303 Main Amp. P.C. Board Ass'y

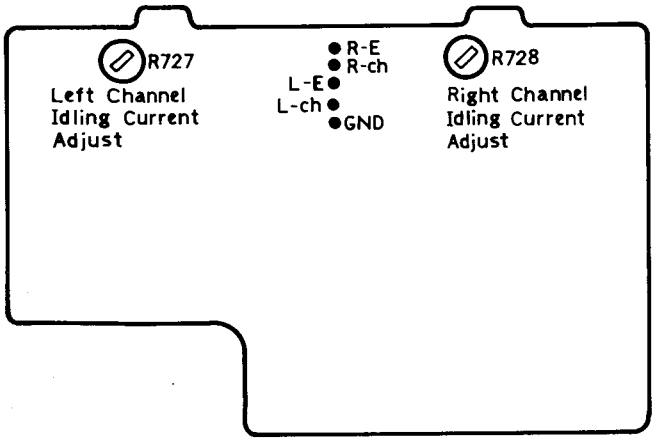


Fig. 8

Precaution:

(1) Allow the set to warm up at least 5 minutes before connecting a DC VTVM.
(2) Keep the heatsink cooling to prevent overheating and consequent destruction of the semiconductor junction and set the volume control to minimum during these adjustment procedures.

( ): for Right channel adjustment

Procedures:

1. Turn R727 (R728) fully counterclockwise before the power is switched on.
2. Connect a DC VTVM to the Test Point L-CH and L-E (R-CH and R-E).
3. Adjust R727 (R728) for DC VTVM reading of 5 mV.

8. Printed Circuit Board Ass'y and Parts List

8-(1) TFC-32 FM/MW(LW) Tuner and Equalizer Amp. P.C. Board Ass'y

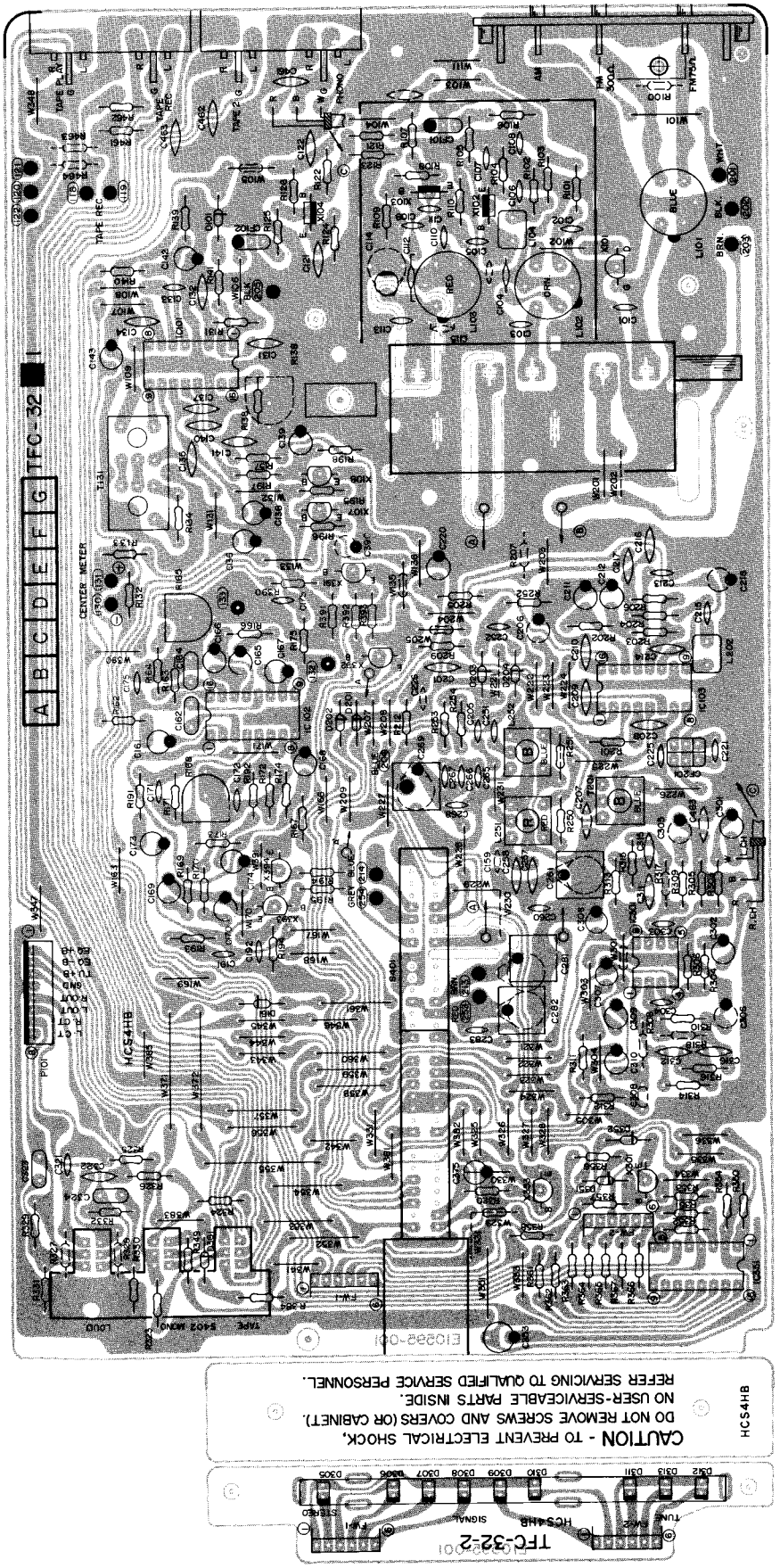


Fig. 9

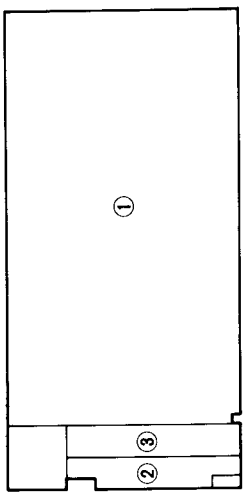


Fig. 10

Each Individual P.C. Board Location

① TFC-32 □-1: FM/AM Tuner and Equalizer Amp. P.C. Board Ass'y
② TFC-32-2 : Signal Indicator L.E.D. P.C. Board Ass'y
③ TFC-32-3 : "Caution" Printed Board (for U.S.A. only)

Note:
The specific symbols (赤 , 黒 , 白 , . . . etc.) on a surface of P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly at the factory.

Transistors

Item No.	Part Number	Rating		Description		
		Pc	fT			Maker
X101	2SK168(E,F)	0.2 W		F.E.T.		Hitachi
X102	2SC535(B,C)	0.1 W	940 MHz	Silicon		"
X103	2SC461(C)	0.2 W	230 MHz	"		"
X104	2SC535(B,C)	0.1 W	940 MHz	"		"
X107	2SC458(C,D)	0.2 W	230 MHz	"		"
X108	2SC458(C,D)	"	"	"		"
X301	2SA1029(C,D)	"	200 MHz	"		"
X353	2SC458(C)	"	230 MHz	"		"
X391	2SC458(C,D)	"	"	"		"
X392	2SA1029(C,D)	"	"	"		"
X393	2SC458(C,D)	"	"	"		"
X394	2SC458(C,D)	"	"	"		"

Integrated Circuits

Item No.	Part Number	Rating	Description	
		Pc		Maker
IC101	HA11225	0.59 W	I.C.	Hitachi
IC102	UPC1161C	0.4 W	"	NEC
IC103	HA1197	0.45 W	"	Hitachi
IC301	NJM4558D-D	0.5 W	"	JRC
IC351	IR2434	1 W	"	Sharp

Diodes

Item No.	Part Number	Rating	Description	
		Pc		Maker
D101	1S2076-31	0.25 W	Silicon	Hitachi
D161	1S2076-31	"	"	"
D201	1S2076-31	"	"	"
D202	1S2076-31	"	"	"
D203	1S2076-31	"	"	"
D204	1S2076-31	"	"	"
D305	LN417YP		L.E.D.	Matsushita
D306	LN217RP		"	"
D307	LN217RP		"	"
D308	LN217RP		"	"
D309	LN217RP		"	"
D310	LN217RP		"	"
D311	LN217RP		"	"
D312	LN217RP		"	"
D313	LN317GP		"	"
D351	1S2076-31	0.25 W	Silicon	Hitachi
D352	1S2076-31	"	"	"
D361	1S2076-31	"	"	"

Coils & Transformers

Item No.	Part Number	Rating	Description
L101	EQR2306-013		RF Coil
L102	E03477-035		"
L103	E03477-034		"
L104	E03522-1R5KY		Choke Coil
L202	E03522-102KY		"
L251	E03079-56		MW OSC. Coil
L252	E03079-038		LW OSC. Coil
T131	E03793-001		FM DET. Transformer
T201	E03613-017		I.F. Transformer

Capacitors

Item No.	Part Number	Rating		Description
C101	QCS21HJ-120H	12 pF	50 V	Ceramic
C102	QCF21HP-103H	0.01 μF	"	"
C103	QCS21HJ-150H	15 pF	"	"
C104	QCS11HJ-4R0H	4 pF	"	"
C105	QCS21HJ-2R0H	2 pF	"	"
C106	QCS21HJ-151H	150 pF	"	"
C107	QCF21HP-103H	0.01 μF	"	"
C108	QCF21HP-103H	"	"	"
C109	QCF21HP-103H	"	"	"
C110	QCT26CH-100H	10 pF	"	"
C111	QCT26CH-220H	22 pF	"	"
C112	QCT05CH-7R0H	7 pF	"	"
C113	QCT26PH-220H	22 pF	"	"
C114	QAT3001-005			Trimmer
C121	QCF21HP-223H	0.022 μF	50 V	Ceramic
C122	QCF21HP-223H	"	"	"
C131	QCF21HP-223H	"	"	"
C132	QCF21HP-223H	"	"	"
C133	QCS21HJ-151H	150 pF	"	"
C134	QCF21HP-223H	0.022 μF	"	"
C135	QCF21HP-223H	"	"	"
C136	QET51AR-107P	100 μF	10 V	Electrolytic
C137	QCF11HP-223	0.022 μF	50 V	Ceramic
C139	QET51HR-474P	0.47 μF	"	Electrolytic
C140	QCF21HP-223H	0.022 μF	"	Ceramic

Capacitors

Item No.	Part Number	Rating		Description
C141	QCF21HP-223H	0.022 μF	50 V	Ceramic
C142	QET51ER-106P	10 μF	25 V	Electrolytic
C143	QET51HR-474P	0.47 μF	50 V	"
C161	QET51ER-106P	10 μF	25 V	"
C162	QFM31HK-473	0.047 μF	50 V	Mylar
C164	QFP31HJ-471	470 pF	"	Polypropyrene
C165	QEB51EM-335	3.3 μF	25 V	Low Leak Current Electrolytic
C166	QET51HR-105P	1 μF	50 V	Electrolytic
C167	QET51HR-105P	"	"	"
C168	QET51CR-227P	220 μF	16 V	"
C169	QET51CR-476P	47 μF	"	"
C170	QET51CR-476P	"	"	"
C171	QCY21HK-821H	820 pF	50 V	Ceramic
C172	QCY21HK-821H	"	"	"
C173	QET51HR-474P	0.47 μF	"	Electrolytic
C174	QET51HR-474P	"	"	"
C175	QCF21HP-223H	0.022 μF	"	Ceramic
C191	QCY21HK-103H	0.01 μF	"	"
C192	QCY21HK-103H	"	"	"
C195	QCF21HP-473H	0.047 μF	"	"
C201	QCF21HP-223H	0.022 μF	"	"
C205	QCY21HK-103H	0.01 μF	"	"
C206	QET51ER-106P	10 μF	25 V	Electrolytic
C208	QCF21HP-223H	0.022 μF	50 V	Ceramic
C209	QCF21HP-223H	"	"	"
C210	QCF21HP-223H	"	"	"
C211	QET51HR-105P	1 μF	"	Electrolytic
C212	QET51ER-106P	10 μF	25 V	"
C213	QCF21HP-102H	1000 pF	50 V	Ceramic
C214	QCF21HP-223H	0.022 μF	"	"
C215	QCS21HJ-121H	120 pF	"	"
C216	QCF21HP-223H	0.022 μF	"	"
C217	QCF21HP-223H	"	"	"
C220	QET51ER-106P	10 μF	25 V	Electrolytic
C221	QCS21HJ-560H	56 pF	50 V	Ceramic
C225	QCS21HJ-470H	47 pF	"	"
C251	QCY21HK-103H	0.01 μF	"	"
C252	QCY21HK-103H	"	"	"
C257	QCT26PH-151H	150 pF	"	"
C258	QCT26PH-181H	180 pF	"	"
C260	QCT26UJ-100H	10 pF	"	"
C261	QAT2001-005			Trimmer
C265	QCT26UJ-270H	27 pF	50 V	Ceramic
C266	QCT26CH-680H	68 pF	"	"
C267	QCT26CH-680H	"	"	"
C268	QCT26CH-220H	22 pF	"	"
C269	QAT2001-005			Trimmer
C281	QAT2001-001			"
C282	QAT2001-005			"
C283	QCS21HJ-100H	10 pF	50 V	Ceramic
C301	QET51HR-475P	4.7 μF	"	Electrolytic
C302	QET51HR-475P	"	"	"
C303	QCS21HJ-101H	100 pF	"	Ceramic
C304	QCS21HJ-101H	"	"	"
C307	QET51CR-107P	100 μF	16 V	Electrolytic
C308	QET51CR-107P	"	"	"
C309	QET51HR-225P	2.2 μF	50 V	"
C311	QCY21HK-182H	1800 pF	"	Ceramic
C312	QCY21HK-182H	"	"	"
C315	QCY21HK-682H	6800 pF	"	"
C316	QCY21HK-682H	"	"	"
C321	QCS21HJ-151H	150 pF	"	"
C322	QCS21HJ-151H	"	"	"
C323	QFM31HK-183	0.018 μF	"	Mylar
C324	QFM31HK-183	"	"	"
C353	QET51CR-107P	100 μF	16 V	Electrolytic
C375	QET51HR-474P	0.47 μF	50 V	"
C461	QCF21HP-223H	0.022 μF	"	Ceramic
C462	QCF21HP-223H	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R101	QRD148J-391S	390 Ω	1/4 W	Carbon
R102	QRD148J-472S	4.7 kΩ	"	"
R103	QRD148J-223S	22 kΩ	"	"
R104	QRD148J-102S	1 kΩ	"	"
R105	QRD148J-101S	100 Ω	"	"
R106	QRD148J-561S	560 Ω	"	"
R107	QRD148J-222S	2.2 kΩ	"	"
R108	QRD148J-103S	10 kΩ	"	"
R109	QRD148J-682S	6.8 kΩ	"	"
R110	QRD148J-272S	2.7 kΩ	"	"
R121	QRD148J-221S	220 Ω	"	"
R122	QRD148J-273S	27 kΩ	"	"
R123	QRD148J-103S	10 kΩ	"	"
R124	QRD148J-471S	470 Ω	"	"
R125	QRD148J-101S	100 Ω	"	"
R126	QRD148J-331S	330 Ω	"	"
R131	QRD148J-391S	390 Ω	"	"
R132	QRD148J-271S	270 Ω	"	"
R133	QRD148J-123S	12 kΩ	"	"
R134	QRD148J-332S	3.3 kΩ	"	"
R137	QRD148J-823S	82 kΩ	"	"
R138	QRD148J-682S	6.8 kΩ	"	"
R139	QRD148J-473S	47 kΩ	"	"
R140	QRD148J-123S	12 kΩ	"	"
R141	QRD148J-103S	10 kΩ	"	"
R162	QRD148J-473S	47 kΩ	"	"
R163	QRD148J-683S	68 kΩ	"	"
R164	QRD148J-163S	16 kΩ	"	"
R165	QVP8A0B-053P	5 kΩ	0.1 W	Variable (Free Run)
R166	QRD148J-102S	1 kΩ	1/4 W	Carbon
R167	QRZ0052-330	33 Ω	"	Fusible ⚠
R168	QVP8A0B-055P	500 kΩ	0.1 W	Variable (Separation)
R169	QRD148J-103S	10 kΩ	1/4 W	Carbon
R170	QRD148J-103S	"	"	"
R171	QRD148J-473S	47 kΩ	"	"
R172	QRD148J-473S	"	"	"
R173	QRD148J-223S	22 kΩ	"	"
R174	QRD148J-223S	"	"	"
R175	QRD148J-681S	680 Ω	"	"
R191	QRD148J-332S	3.3 kΩ	"	"
R192	QRD148J-332S	"	"	"
R193	QRD148J-472S	4.7 kΩ	"	"
R194	QRD148J-472S	"	"	"
R195	QRD148J-333S	33 kΩ	"	"
R196	QRD148J-103S	10 kΩ	"	"
R197	QRD148J-563S	56 kΩ	"	"
R198	QRD148J-563S	"	"	"
R201	QRD148J-152S	1.5 kΩ	"	"
R202	QRD148J-103S	10 kΩ	"	"
R203	QRD148J-103S	"	"	"
R204	QRD148J-271S	270 Ω	1/4 W	"
R205	QRD148J-562S	5.6 kΩ	"	"
R206	QRD148J-222S	2.2 kΩ	"	"
R209	QRD148J-151S	150 Ω	"	"
R212	QRD148J-151S	"	"	"
R250	QRD148J-102S	1 kΩ	"	"
R251	QRD148J-561S	560 Ω	"	"
R252	QRD148J-562S	5.6 kΩ	"	"
R253	QRD148J-562S	"	"	"
R254	QRD148J-562S	"	"	"
R303	QRD148J-222S	2.2 kΩ	"	"
R304	QRD148J-222S	"	"	"
R305	QRD148J-563S	56 kΩ	"	"
R306	QRD148J-563S	"	"	"
R309	QRD148J-102S	1 kΩ	"	"
R310	QRD148J-102S	"	"	"
R311	QRD148J-104S	100 kΩ	"	"
R312	QRD148J-104S	"	"	"
R313	QRD148J-393S	39 kΩ	"	"
R314	QRD148J-393S	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R315	QRD148J-474S	470 kΩ	1/4 W	Carbon
R316	QRD148J-474S	"	"	"
R320	QRD148J-223S	22 kΩ	"	"
R323	QRD148J-332S	3.3 kΩ	"	"
R324	QRD148J-332S	"	"	"
R325	QRD148J-332S	"	"	"
R326	QRD148J-332S	"	"	"
R329	QRD148J-683S	68 kΩ	"	"
R330	QRD148J-223S	22 kΩ	"	"
R331	QRD148J-223S	"	"	"
R332	QRD148J-683S	68 kΩ	"	"
R336	QRD148J-560S	56 Ω	"	"
R339	QRD148J-151S	150 Ω	"	"
R349	QRD148J-562S	5.6 kΩ	"	"
R351	QRD148J-333S	33 kΩ	"	"
R352	QRD148J-681S	680 Ω	"	"
R353	QRD148J-102S	1 kΩ	"	"
R354	QRD148J-303S	30 kΩ	"	"
R356	QRD148J-102S	1 kΩ	"	"
R357	QRD148J-682S	6.8 kΩ	"	"
R358	QRD148J-222S	2.2 kΩ	"	"
R361	QRD148J-102S	1 kΩ	"	"
R362	QRD148J-102S	"	"	"
R363	QRD148J-102S	"	"	"
R364	QRD148J-102S	"	"	"
R365	QRD148J-102S	"	"	"
R366	QRD148J-102S	"	"	"
R367	QRD148J-681S	680 Ω	"	"
R384	QRD148J-123S	12 kΩ	"	"
R390	QRD148J-563S	56 kΩ	"	"
R391	QRD148J-563S	"	"	"
R392	QRD148J-103S	10 kΩ	"	"
R393	QRD148J-223S	22 kΩ	"	"
R394	QRD148J-223S	"	"	"
R395	QRD148J-223S	"	"	"
R422	QRD148J-821S	820 Ω	"	"
R423	QRD148J-821S	"	"	"
R461	QRD148J-124S	120 kΩ	"	"
R462	QRD148J-124S	"	"	"

Others

Item No.	Part Number	Rating	Description
S401	QSR5985-20A		Rotary Switch
S402	QSP0238-054		Push Switch
CF101	E03357-014		Ceramic Filter
CF102	E03357-014		"
CF201	E03613-019		"
	EMN00TV-401A		Pin Jack
	EWR36A-20NN		Flat Wire
	E03572-016		Antenna Terminal
	ENZ1002-002		V. Capacitor
	E300098-001		Shield Cover
	E031482-001		LED Holder
	E43727-002		Tab
	E68131-001		Bus Bar
	QHW1052-001		Wire Clamp
	QMV5005-008		8P Plug Ass'y
	E03751-001UD		DIN Socket Ass'y

8-(2) TXX-303 Main Amp. Power Supply and All Functions P.C. Board Ass'y

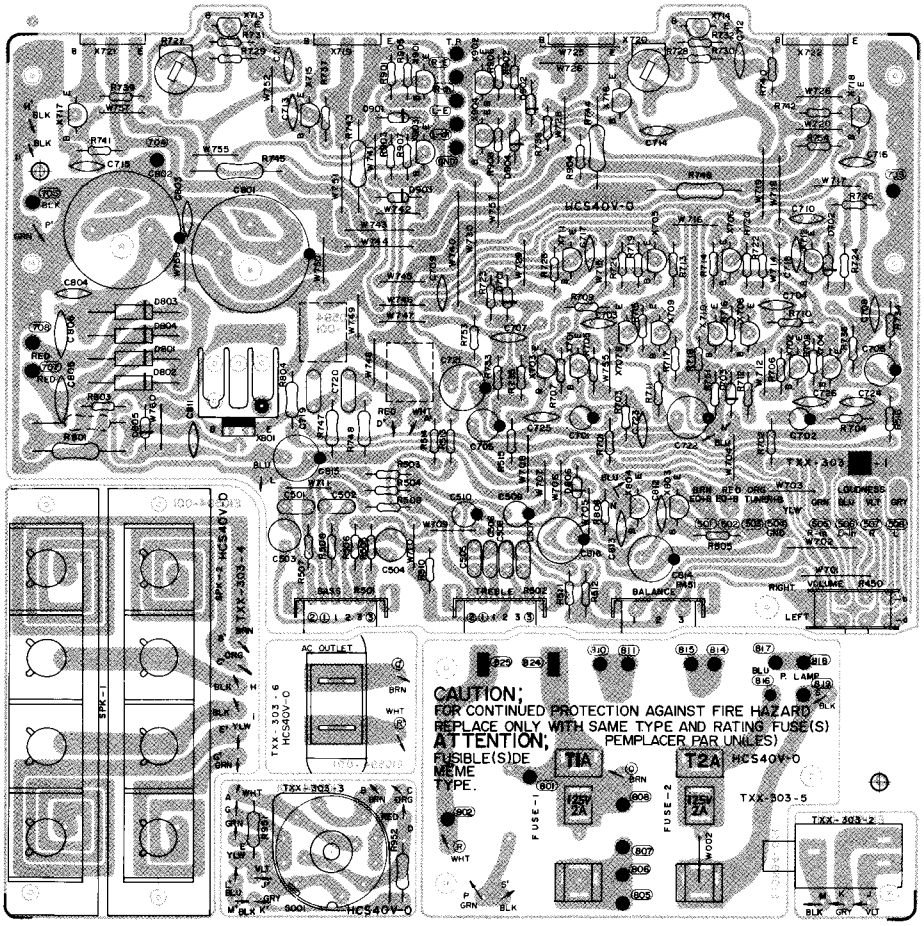


Fig. 11

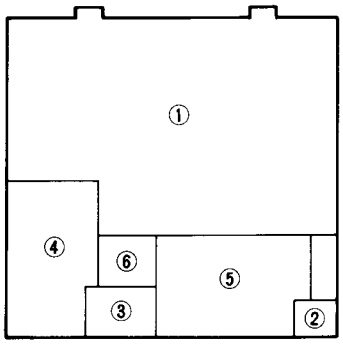


Fig. 12

Each Individual P.C. Board Location

① TXX-303 □-1: Main Amp. P.C. Board Ass'y
② TXX-303-2 : Headphone Jack P.C. Board Ass'y
③ TXX-303-3 : Speaker Select Switch P.C. Board Ass'y
④ TXX-303-4 : Speaker Terminal P.C. Board Ass'y
⑤ TXX-303-5 : Fuse P.C. Board Ass'y
⑥ TXX-303-6 : AC Socket P.C. Board Ass'y

Transistors

Item No.	Part Number	Rating		Description	
		Pc	fT		Maker
X701	2SC1775(F)	0.3 W	200 MHz	Silicon	Hitachi
X702	2SC1775(F)	"	"	"	"
X703	2SC1775(F)	"	"	"	"
X704	2SC1775(F)	"	"	"	"
X705	2SA1084(E)	0.4 W	120 MHz	"	"
X706	2SA1084(E)	"	"	"	"
X707	2SA1029(C)	0.2 W	200 MHz	"	"
X708	2SA1029(C)	"	"	"	"
X709	2SA1084(E)	0.4 W	120 MHz	"	"
X710	2SA1084(E)	"	"	"	"
X711	2SC2546(E)	"	90 MHz	"	"
X712	2SC2546(E)	"	"	"	"
X713	2SC458(C)	0.2 W	230 MHz	"	"
X714	2SC458(C)	"	"	"	"
X715	2SC2235(O,Y)	0.9 W	120 MHz	"	Toshiba
X716	2SC2235(O,Y)	"	"	"	"
X717	2SA965(O,Y)	"	"	"	"
X718	2SA965(O,Y)	"	"	"	"
X719	2SD895UA(D,E)	60 W	15 MHz	"	Sanyo
X720	2SD895UA(D,E)	"	"	"	"
X721	2SB775UA(D,E)	"	"	"	"
X722	2SB775UA(D,E)	"	"	"	"
X801	2SD313V(D,E)	30 W	8 MHz	"	"
X901	2SC458(C,D)	0.2 W	230 MHz	"	Hitachi
X902	2SC458(C,D)	"	"	"	"
X903	2SA1029(C,D)	"	200 MHz	"	"
X904	2SA1029(C,D)	"	"	"	"

Note:
The specific symbols (赤, 黒, 白, . . . etc.) on a surface of P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly at the factory.

Diodes

Item No.	Part Number	Rating	Description	
		Pc		Maker
D801	S3V20F		Silicon	Shindengen
D802	S3V20F		"	"
D803	S3V20F		"	"
D804	S3V20F		"	"
D805	RD13EB3		Silicon (Zener)	NEC
D806	RD13EB3		"	"
D901	1S2076-31	0.25 W	Silicon	Hitachi
D902	1S2076-31	"	"	"
D903	1S2076-31	"	"	"
D904	1S2076-31	"	"	"

Capacitors

Item No.	Part Number	Rating		Description
C501	QFM31HK-333	0.033 μF	50 V	Mylar
C502	QFM31HK-333	"	"	"
C503	QEZ0046-224	0.22 μF	"	Electrolytic
C504	QEZ0046-224	"	"	"
C505	QFM31HK-182	1800 pF	"	Mylar

Capacitors

Item No.	Part Number	Rating		Description
C506	QFM31HK-182	1800 pF	50 V	Mylar
C507	QFM31HK-183	0.018 μF	"	"
C508	QFM31HK-183	"	"	"
C509	QET51HR-475P	4.7 μF	"	Electrolytic
C510	QET51HR-475P	"	"	"
C701	QET51HR-225P	2.2 μF	"	"
C702	QET51HR-225P	"	"	"
C703	QCS21HJ-471H	470 pF	"	Ceramic
C704	QCS21HJ-471H	"	"	"
C705	QET51AR-107P	100 μF	10 V	Electrolytic
C706	QET51AR-107P	"	"	"
C707	QCS21HJ-100H	10 pF	50 V	Ceramic
C708	QCS21HJ-100H	"	"	"
C709	QCY21HK-332H	3300 pF	"	"
C710	QCY21HK-332H	"	"	"
C711	QCY21HK-103H	0.01 μF	"	"
C712	QCY21HK-103H	"	"	"
C713	QCS21HJ-181H	180 pF	"	"
C714	QCS21HJ-181H	"	"	"
C715	QCS21HJ-181H	"	"	"
C716	QCS21HJ-181H	"	"	"
C717	QCS21HJ-151H	150 pF	"	"
C718	QCS21HJ-151H	"	"	"
C719	QFM31HK-473	0.047 μF	"	Mylar
C720	QFM31HK-473	"	"	"
C721	QET51VR-107P	100 μF	35 V	Electrolytic
C722	QET51VR-107P	"	"	"
C723	QCS21HJ-121H	120 pF	50 V	Ceramic
C724	QCS21HJ-121H	"	"	"
C725	QCS21HJ-101H	100 pF	"	"
C726	QCS21HJ-101H	"	"	"
C801	QEW81VA-688E	6800 μF	35 V	Electrolytic
C802	QEW81VA-688E	"	"	"
C803	QCF21HP-473H	0.047 μF	50 V	Ceramic
C804	QCF21HP-473H	"	"	"
C805	QFM31HK-104	0.1 μF	"	Mylar
C806	QCE22HP-103	0.01 μF	500 V	Ceramic
C811	QCF21HP-103H	"	50 V	"
C815	QET51CR-227P	220 μF	16 V	Electrolytic
C816	QET51CR-476P	47 μF	"	"

Resistors

Item No.	Part Number	Rating		Description
R503	QRD148J-123S	12 kΩ	1/4 W	Carbon
R504	QRD148J-123S	"	"	"
R505	QRD148J-182S	1.8 kΩ	"	"
R506	QRD148J-182S	"	"	"
R507	QRD148J-823S	82 kΩ	"	"
R508	QRD148J-823S	"	"	"
R509	QRD148J-182S	1.8 kΩ	"	"
R510	QRD148J-182S	"	"	"
R511	QRD148J-681S	680 Ω	"	"
R512	QRD148J-681S	"	"	"
R513	QRD148J-472S	4.7 kΩ	"	"
R514	QRD148J-472S	"	"	"
R515	QRD148J-562S	5.6 kΩ	"	"
R516	QRD148J-562S	"	"	"
R701	QRD148J-222S	2.2 kΩ	"	"
R702	QRD148J-222S	"	"	"
R703	QRD148J-104S	100 kΩ	"	"
R704	QRD148J-104S	"	"	"
R705	QRD148J-102S	1 kΩ	"	"
R706	QRD148J-102S	"	"	"
R707	QRD148J-102S	"	"	"
R708	QRD148J-102S	"	"	"
R709	QRD148J-331S	330 Ω	"	"
R710	QRD148J-331S	"	"	"
R711	QRD148J-682S	6.8 kΩ	"	"
R712	QRD148J-682S	"	"	"
R713	QRD149J-220S	22 Ω	"	" ⚠
R714	QRD149J-220S	"	"	" ⚠
R715	QRD148J-391S	390 Ω	"	"
R716	QRD148J-391S	"	"	"

Resistors

Item No.	Part Number	Rating		Description
R717	QRD148J-333S	33 kΩ	1/4 W	Carbon
R718	QRD148J-333S	"	"	"
R719	QRD148J-472S	4.7 kΩ	"	"
R720	QRD148J-472S	"	"	"
R723	QRD149J-101S	100 Ω	"	" ⚠
R724	QRD149J-101S	"	"	" ⚠
R725	QRD149J-101S	"	"	" ⚠
R726	QRD149J-101S	"	"	" ⚠
R727	EVP811-7-B202	2 kΩ	0.2 W	Variable (Idling Current)
R728	EVP811-7-B202	"	"	"
R729	QRD148J-332S	3.3 kΩ	1/4 W	Carbon
R730	QRD148J-332S	"	"	"
R731	QRD148J-152S	1.5 kΩ	"	"
R732	QRD148J-152S	"	"	"
R733	QRD148J-104S	100 kΩ	"	"
R734	QRD148J-104S	"	"	"
R735	QRD148J-561S	560 Ω	"	"
R736	QRD148J-561S	"	"	"
R737	QRD149J-100S	10 Ω	"	" ⚠
R738	QRD149J-100S	"	"	" ⚠
R739	QRD149J-271S	270 Ω	"	" ⚠
R740	QRD149J-271S	"	"	" ⚠
R741	QRD149J-100S	10 Ω	"	" ⚠
R742	QRD149J-100S	"	"	" ⚠
R743	QRG029J-R22S	0.22 Ω	2 W	Oxide Metal Film ⚠
R744	QRG029J-R22S	"	"	" ⚠
R745	QRG029J-R22S	"	"	" ⚠
R746	QRG029J-R22S	"	"	" ⚠
R747	QRD129J-100	10 Ω	1/2 W	Carbon ⚠
R748	QRD129J-100	"	"	" ⚠
R753	QRD149J-100S	"	1/4 W	" ⚠
R754	QRD149J-100S	"	"	" ⚠
R801	QRG026J-270S	27 Ω	2 W	Oxide Metal Film ⚠ (for U.K.)
R801	QRG029J-270S	"	"	Oxide Metal Film (for all other countries) ⚠
R803	QRD148J-392S	3.9 kΩ	1/4 W	Carbon
R804	QRD129J-122	1.2 kΩ	1/2 W	" ⚠
R901	QRD148J-821S	820 Ω	1/4 W	"
R902	QRD148J-821S	"	"	"
R903	QRD148J-821S	"	"	"
R904	QRD148J-821S	"	"	"
R905	QRD148J-102S	1 kΩ	"	"
R906	QRD148J-102S	"	"	"
R907	QRD148J-102S	"	"	"
R908	QRD148J-102S	"	"	"
R951	QRD129J-181	180 Ω	1/2 W	" ⚠
R952	QRD129J-181	"	"	" ⚠

Others

Item No.	Part Number	Rating	Description
S901	QSR0083-001		Rotary Switch
	SBSB3008Z		Screw
	SBSE3012Z		"
	E301480-001		Heat Sink
	WSS3000N		Washer
R450M	QVD8A2B-AF5V		Volume (250 kΩ)
R451B	QVF0A2W-6F5		Balance (250 kΩ)
R501B	QVD4A2C-115		Bass (100 kΩ)
R502T	QVD4A2C-115		Treble (100 kΩ)
	EWS018-023		SKT Wire Ass'y
	E03572-007EM		SPK Terminal
	E301481-001		C.B. Holder
	E301481-002		C.B. Holder
	E33754-001		Tie Band
	E43727-002		Tab
	E48965-002		Fuse Clip
	E65508-002		Tab
	QMS6302-111		Headphone Jack
	E65654-001		Spacer (for U.K.)
	E61537-004		Heat Sink (for X801)
	SBSB3008Z		Screw

9. Packing Materials and Part Numbers

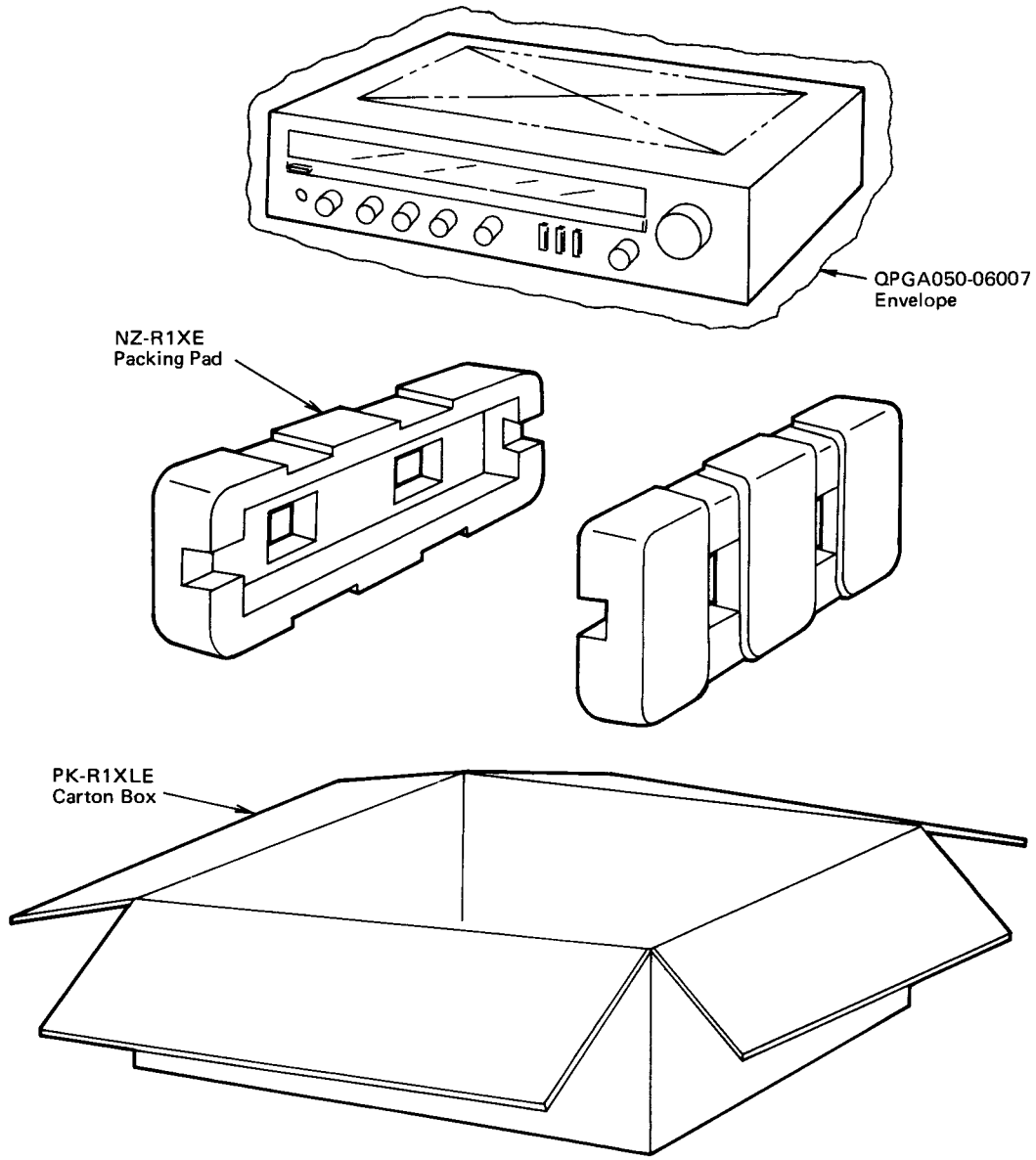
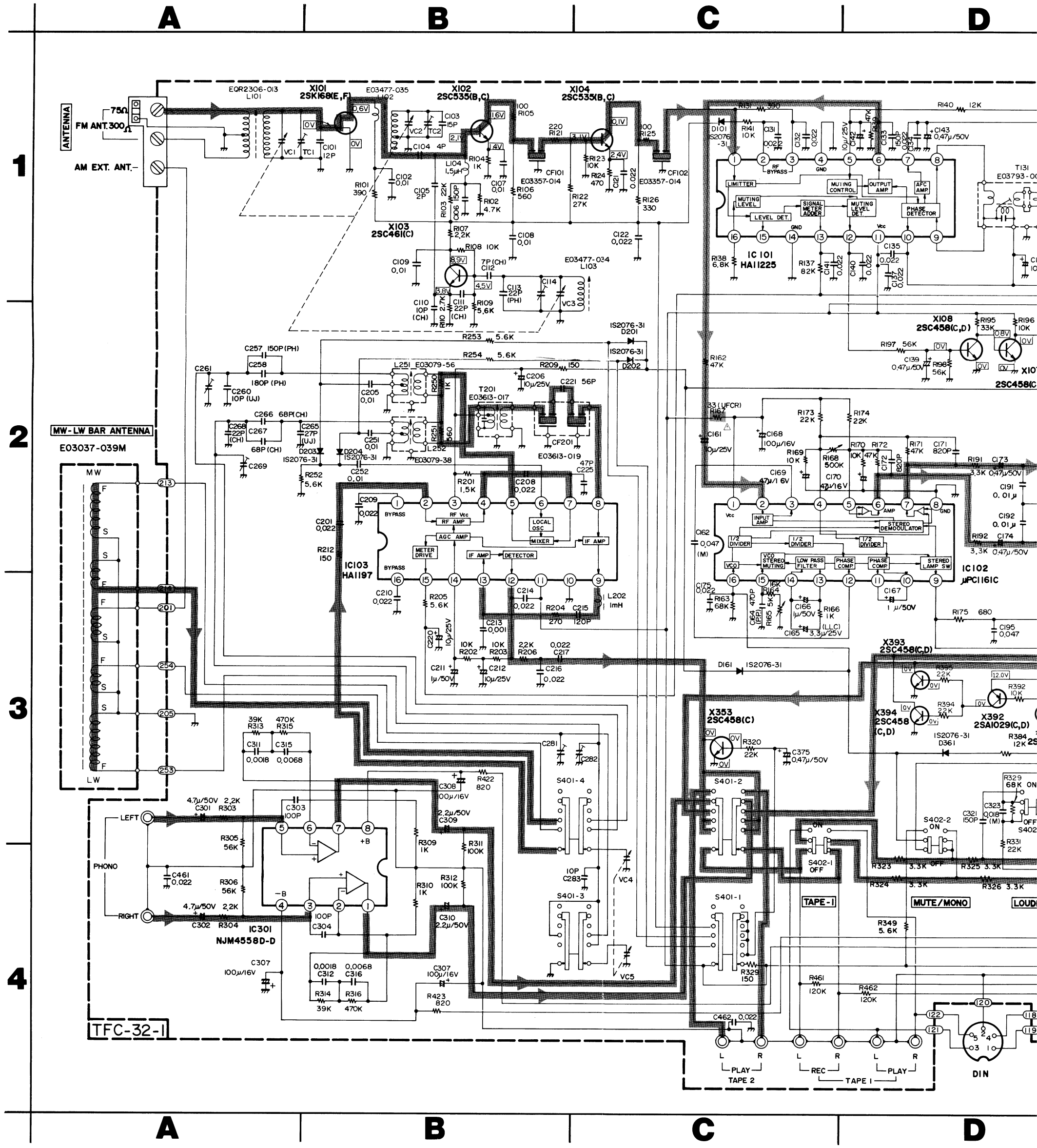


Fig. 13

10. Accessories List

Item No.	Part Number	Description	Q'ty
1	E30580-892A	Instruction Book	1
2	BT20013C	Warranty Card (for U.K. only)	1
3	E03614-004	FM Antenna	1
4	QPGA025-03505	Envelope for Instruction Book	1

11. R-1XL Schematic Diagram

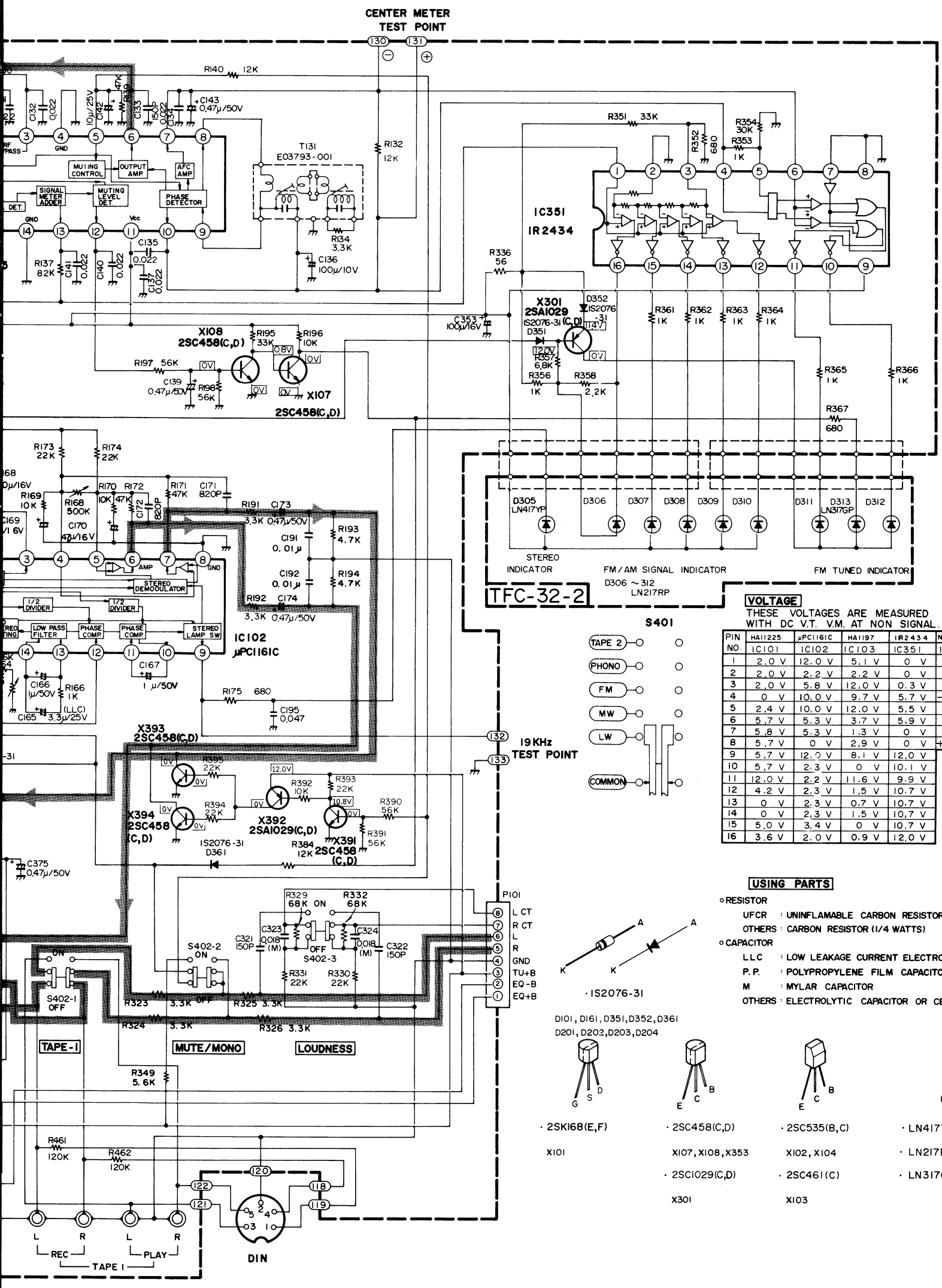


Printed Circuit Board Ass'y Locations

P.C. Board Ass'y	Description	Page
TFC-32	FM/MW(LW) Tuner and Equalizer Amp. P.C. Board Ass'y	8
TXX-303	Main Amp., Power Supply and All Functions P.C. Board Ass'y	11

Notes:

1. ⬭ shows DC voltage to the chassis with no signal input.
2. * ⬭ shows DC voltage to the chassis when 10 mV antenna input applied.
3. Voltage values in ▭ are positive.
4. Voltage values in ▭ are negative.
5. —— indicates positive B power supply.
6. —— indicates negative B power supply.
7. ▓▓ indicates signal path.
8. When replacing the parts in t those marked with ⚠ , be sur to ensure safety.
9. Parts in red indicate transistors
10. This is the standard circuit dia The design and contents are notice.



VOLTAGE

THESE VOLTAGES ARE MEASURED WITH DC V.T. V.M. AT NON SIGNAL.

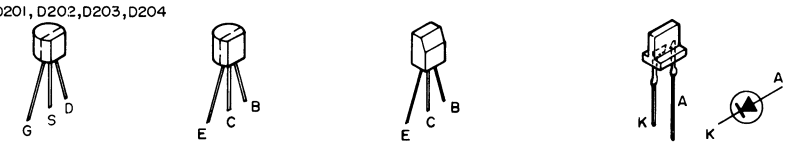
PIN NO.	HA11225 IC101	μPC1161C IC102	HA1197 IC103	IR2434 IC351	NJM4558D-D IC301
1	2.0 V	12.0 V	5.1 V	0 V	0 V
2	2.0 V	2.2 V	2.2 V	0 V	0 V
3	2.0 V	5.8 V	12.0 V	0.3 V	0 V
4	0 V	10.0 V	9.7 V	5.7 V	-12.0 V
5	2.4 V	10.0 V	12.0 V	5.5 V	0 V
6	5.7 V	5.3 V	3.7 V	5.9 V	0 V
7	5.8 V	5.3 V	1.3 V	0 V	0 V
8	5.7 V	0 V	2.9 V	0 V	+12.0 V
9	5.7 V	12.0 V	8.1 V	12.0 V	
10	5.7 V	2.3 V	0 V	10.1 V	
11	12.0 V	2.2 V	11.6 V	9.9 V	
12	4.2 V	2.3 V	1.5 V	10.7 V	
13	0 V	2.3 V	0.7 V	10.7 V	
14	0 V	2.3 V	1.5 V	10.7 V	
15	5.0 V	3.4 V	0 V	10.7 V	
16	3.6 V	2.0 V	0.9 V	12.0 V	

USING PARTS

- RESISTOR
  - UFCR : UNINFLAMABLE CARBON RESISTOR (1/4 WATTS)
  - OTHERS : CARBON RESISTOR (1/4 WATTS)
- CAPACITOR
  - L.L.C. : LOW LEAKAGE CURRENT ELECTROLYTIC CAPACITOR
  - P.P. : POLYPROPYLENE FILM CAPACITOR
  - M : MYLAR CAPACITOR
  - OTHERS : ELECTROLYTIC CAPACITOR OR CERAMIC CAPACITOR

· IS2076-31

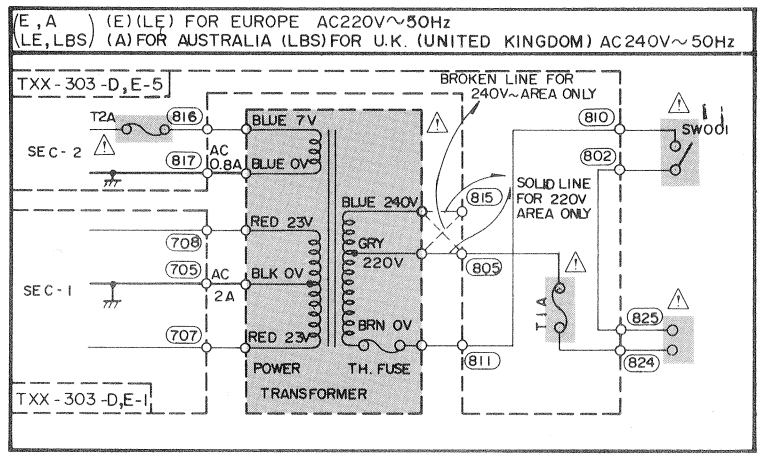
D101, D161, D351, D352, D361
D201, D202, D203, D204



· 2SK168(E,F)	· 2SC458(C,D)	· 2SC535(B,C)	· LN417YP D305
X101	X107, X108, X353	X102, X104	· LN217RP D306 ~ D312
	· 2SC1029(C,D)	· 2SC461(C)	· LN317GP D313
	X301	X103	

gnal input.
en 10 mV

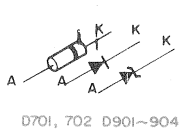
8. When replacing the parts in the darkned area (▒▒) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
9. Parts in red indicate transistors or ICs.
10. This is the standard circuit diagram.
    The design and contents are subject to change without notice.



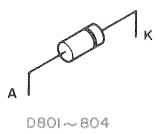
USING PARTS (REFFER TO SERVICE MANUAL)

RESISTORS
- UFCR : UNINFLAMMABLE CARBON RESISTOR (1/4WATTS)
- UFOR : UNINFLAMMABLE OXIDE METAL RESISTOR
- UFMR : UNINFLAMMABLE METAL PLATE RESISTOR
- OTHERS : CARBON RESISTOR (1/4 WATTS)

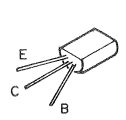
CAPACITOR
- M : MYLAR CAPACITOR
- N.P. : NON POLARIZED ELECTROLYTIC CAPACITOR
- OTHERS : ELECTROLYTIC CAPACITOR OR CERAMIC CAPACITOR



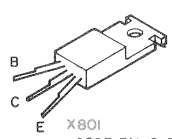
D701, 702 D901~904
IS2076-31
D805, 806
RD13EB3



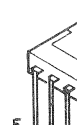
D801~804
S3V20F



X701~704 2SC1775(F)
X705,706 2SA1084(E)
X707,708 2SA1029(C,D)
X709,710 2SA1084(E)
X711,712 2SC2546(E)
X715,716 2SC2235(O,Y)
X717,718 2SA965(O,Y)
X901,902 2SC458(C,D)
X903,904 2SA1029(C,D)
X713,714 2SC458(C,D)



X801
2SD313V (D,E)



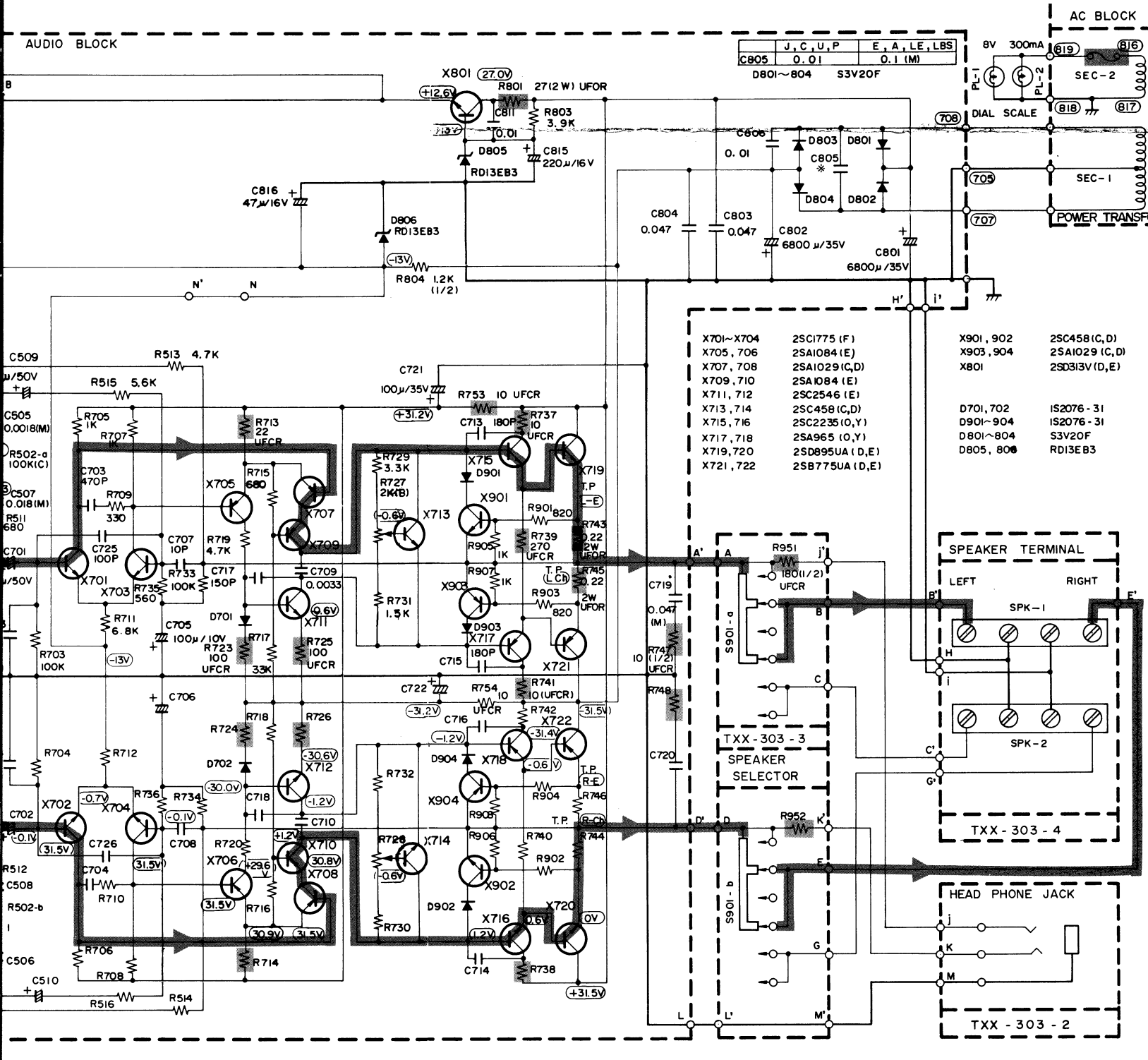
X719,720
X721,722

Printed Circuit Board Ass'y Locations

P.C. Board Ass'y	Description	Page
TFC-32	FM/MW(LW) Tuner and Equalizer Amp. P.C. Board Ass'y	8
TXX-303	Main Amp., Power Supply and All Functions P.C. Board Ass'y	11

Notes:

1. ⬭ shows DC voltage to the chassis with no signal input.
2. * ⬭ shows DC voltage to the chassis when 10 mV antenna input applied.
3. Voltage values in ▭ are positive.
4. Voltage values in ▭ are negative.
5. —— indicates positive B power supply.
6. —— indicates negative B power supply.
7. ▒ indicates signal path.
8. When re
those ma
to ensure
9. Parts in r
10. This is th
The desi
notice.



input.
0 mV

8. When replacing the parts in the darkned area (▒▒) and those marked with ⚠, be sure to use the designated parts to ensure safety.
9. Parts in red indicate transistors or ICs.
10. This is the standard circuit diagram.
    The design and contents are subject to change without notice.